

In re Appln. of ANDRIESSEN
Application No. 10/628,618

REMARKS

Reconsideration of the application is respectfully requested in view of the foregoing amendments and the following remarks.

Summary of the Application

Claims 1-3 and 12-27 are currently pending, with claims 4-11 previously being withdrawn, without prejudice. In particular, claims 1-3, 12-15 and 18-22 are currently amended, with claims 23-27 being newly presented. Claims 23-27 are based on claims 1 and 3, and other dependent claims and the specification, and as such do not introduce any new matter into the application.

Summary of the Interview

Applicant agrees with the substance of the interview as set forth in the Interview Summary forwarded with the Action.

As a follow-up to the interview, and as requested, applicant forwarded a copy of the paper acknowledging receipt by the USPTO of the certified copy of the foreign priority document. Applicant's submission was received by the USPTO, as the Action notes in the Office Action Summary (Paragraph 12—Priority under 35 USC 119), thereby completing applicant's claim of priority.

Summary of the Office Action

The non-final Office Action of November 15, 2004, opened by noting the acceptance and recordation of the terminal disclaimer filed on September 20, 2004. The Action continues by objecting to the disclosure because a description of the drawings is missing therefrom. Applicant has amended the specification to remedy this oversight. No new matter has been introduced into the application via this amendment.

Turning to the substantive aspects of the Action, claims 1 and 2 are rejected as anticipated by Vogel et al. Vogel et al. is said in the Action to disclose the sensitization of nano-porous metal oxide semiconductor such as titanium oxide, et al. (metal chalcogenide nano-particles). The sensitization process is said to include the same dipping as claimed, and thus the nano-porous metal oxide disclosed in Vogel et al. is considered to be in-situ spectrally sensitized as claimed. The band gap as claimed is also alleged to be present in Vogel et al. because the same metal oxide and metal chalcogenide used in the application are used in Vogel et al.

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Vogel et al. is also said to disclose the use of the sensitized nano-particle metal oxide as the electrode in an electrolyte containing $\text{KH}_2\text{PO}_4/\text{K}_2\text{HPO}_4$. As disclosed in the application at page 9, the process of adding phosphate to the nano-porous metal oxide is to rinse the metal oxide with an aqueous solution containing a phosphate. Accordingly, the Action concludes that the nano-porous metal oxide is considered to contain the phosphate after the metal oxide immerses in the aqueous electrolyte solution containing the phosphate.

Claim 3 is objected to as being dependent on a rejected base claim, but would be allowable if rewritten in independent form. Claims 15-22 are also deemed allowable, although the Office Action Summary indicates that claims 12-22 are allowable. Clarification is respectfully requested.

Discussion

Claims 1 and 2 are not anticipated by Vogel et al. The disclosure and teaching of Vogel et al. is limited to contacting nano-porous metal oxide semiconductor coated with Bi_2S_3 and Sb_2S_3 with a 0.1M solution of Na_2S buffered with $\text{KH}_2\text{PO}_4/\text{K}_2\text{HPO}_4$. As the disclosure of Vogel et al. is limited in this regard, and teaches no alternative method or materials, it cannot be fairly argued that Vogel et al. discloses or teaches the subject matter of claim 1, which requires a nano-porous metal oxide semiconductor with a band-gap of greater than 2.9 eV in-situ spectrally-sensitized on its internal and external surface with metal chalcogenide nano-particles with a band-gap of less than 2.9 eV comprising at least one metal chalcogenide, wherein said nano-porous metal oxide further comprises a phosphoric acid and a phosphate. At a minimum, Vogel et al. does not disclose or suggest the use of both a phosphoric acid and a phosphate.

None of the new claims are anticipated or rendered obvious over Vogel et al. For example, Vogel et al. fails to disclose or teach the semiconductor as claimed, e.g., wherein the metal chalcogenide is selected from a certain group. Further, claim 26, which combines the subject matter of claims 1 and 3 (prior to their amendment herein), is allowable, as is dependent claim 27.

Conclusion

The application is considered in good and proper form for allowance, and the Examiner is respectfully requested to pass this application to issue. If, in the opinion of the Examiner, a telephone conference would expedite the prosecution of the subject application, the Examiner is invited to call the undersigned attorney.

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Respectfully submitted,



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Amendment or ROA - Regular (Revised 11-23-04)

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